

THREE NEW SPECIES OF PTEROMALIDAE (HYMENOPTERA: CHALCIDOIDEA) FROM INDIA¹

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(With fifteen text-figures)

Key words: Hymenoptera, Chalcidoidea, Pteromalidae, *Cryptoprymna*, *Toxeumorpha*, new species

Three new species of Pteromalidae (Hymenoptera : Chalcidoidea), namely, *Cryptoprymna elongata*, *C. indiana* and *Toxeumorpha minuta* from India are described and illustrated. A key to the species of *Cryptoprymna* from India is provided.

INTRODUCTION

The paper deals with the descriptions of three new species of Pteromalidae collected from Kerala, India. The genera *Cryptoprymna* Forster and *Toxeumorpha* Girault, to which the new species are assigned, are being reported here for the first time from India.

Terminology followed in this paper is based on Graham (1969). In addition, the antennal funicular segments are numbered from F1 to F6 and the gastral tergites from T1 to T6, beginning with the first after petiole and the last before epipygium. The following abbreviations are used: Ocellar ocular distance OOL, Posterior ocellar distance POL, Submarginal vein SMV, Marginal vein MV, Post-marginal vein PMV, and Stigmal vein STV.

The types are deposited in the collection of the Zoological Survey of India, Calicut.

Genus *Cryptoprymna* Forster

Prosodes Walker 1833: 371, 374.

Type species: *Prosodes ater* Walker, preoccupied by *Prosodes* Eschscholtz 1829.

Cryptoprymna Forster 1856: 52, 56, 59. Replacement name for *Prosodes* Walker.

Cryptoprymnus Thomson 1878: 17, 22. Cresson 1887: 75 (key). (Invalid emendation).

Polycystelomorpha Girault 1915 (a): 340. Type species *Polycystelomorpha flavifemur* Girault, by original designation, Boucek 1988: 467: synonymy.

The genus contains six described species *C. atra* (Walker 1833) and *C. dixiana* (Heydon 1988) from Nearctic, *C. africanus* (Boucek 1976) from Southern Africa, *C. brama* (Motschulsky 1863) from Southern Asia, *C. crucigera* (Boucek 1988) from Papua New Guinea and *C. australiensis* (Girault 1913) from Queensland. Two new species *C. elongata* and *C. indiana* are being added here to the genus from India.

KEY TO INDIAN SPECIES OF *CRYPTOPRYMNA* FORSTER

1. Antenna (Fig. 2) slender, with F1 as long as F2, scape a little longer than eye, clava 2x as long as wide; MV length 1.3x PMV; gastral petiole (Fig. 1) slender, length 2.9x width *elongata* sp. nov.
- Antenna (Fig. 8) stout with F1 shorter than F2, scape little shorter than eye, clava 1.6x as long as wide; MV shorter, as long as PMV; gastral petiole shorter, length 2.3x width *indiana* sp. nov.

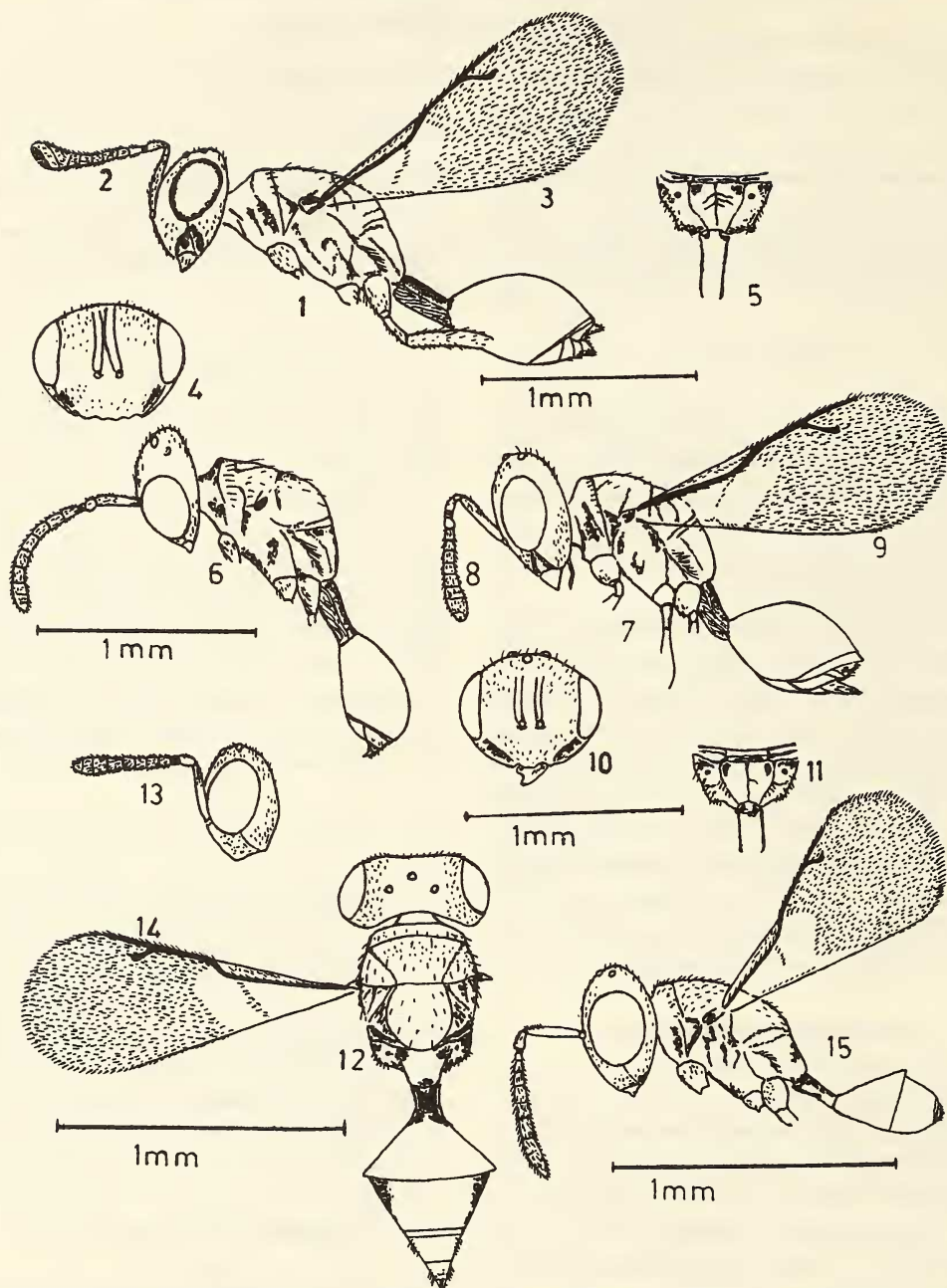
1. *Cryptoprymna elongata* sp. nov. (Figs 1-6)

Female: Length 1.8-2.0 mm (Holotype 2.0 mm). Body black. Antennae testaceous with clava darker. Legs with coxae concolorous with thorax, remainder yellow, with tips of tarsi pale brown; tegulae pale brown; wings hyaline; veins pale brown.

¹Accepted August 1998

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Figs 1-6: *Cryptoprymna elongata* sp. nov. (Female) 1. Body in profile; 2. Antenna; 3. Forewing; 4. Head in front view; 5. Propodeum in dorsal view; 6. Male body in profile.

7-11. *Cryptoprymna indiana* sp. nov. (Female) 7. Body in profile; 8. Antenna; 9. Forewing; 10. Head in front view; 11. Propodeum in dorsal view.

Figs 12-15: *Toxeumorpha minuta* sp. nov. (Female) 12. Body in dorsal view; 13. Head in profile with antenna; 14. Forewing; 15. Male body in profile.

Head: (Figs 1 & 4) uniformly and finely reticulate with scattered white hairs. In dorsal view width 2x length; temple moderately converging, length 0.5x eye length; POL 1.4x OOL. In front view, head width 1.3x height; anterior margin of clypeus slightly emarginate; malar space length 0.5x eye length; eyes separated by 1.5x their length. Antenna (Fig. 2) inserted just above lower margin of eyes; scape reaching median ocellus, length 1.3x eye length; pedicel plus flagellum as long as head width; clava a little longer than three preceding segments combined.

Thorax: (Fig. 1) pronotal collar margined anteriorly; anterior half finely reticulate and posterior half shiny. Mesoscutum finely reticulate, width 1.5x length. Scutellum similarly sculptured as on mesoscutum, length 1.2x width, frenal area shiny. Propodeum (Fig. 5) width 2x length, lateral parts finely reticulate. Forewing (Fig. 3) with basal vein setate. Relative lengths of SMV, MV, PMV, and STV as 24.5:15:12.5:8.

Gaster: (Fig. 1) length 1.5x width; petiole dorsally reticulate, laterally with longitudinal rugae, length 2.9x width.

Male: (Fig. 6) Length 1.7 mm. Generally resembles female but differing in having slender antennae with elongate funicular segments and clava not wider than funicle and in the nature of gaster.

Holotype: Female: INDIA. Kerala: Idukki (Kulamavu), 1.xii.1988, Coll. P.M. Sureshan.

Allotype: Male: Kerala: Palghat (Mukali), 10.xii.1987, Coll. P.M. Sureshan.

Paratypes: 1 Female, Kerala, Silent Valley, 30.xii.1988, 1 Female, Kerala, Wynaad (Manantody), 22.ii.1988 (Coll. P.M. Sureshan).

Biology: Not known.

Remarks: This species resembles *C. atra* Walker in having forewing with basal cell and vein setate, patch of setae ventrally behind MV; occiput concave in dorsal view, bare petiole, shorter propodeum, slender antennae and longer

gaster. But it differs from *atra* in having a longer petiole (length 2.9x width), forewing with MV longer than PMV and 0.6x SMV. In *atra* the petiole is shorter (length 1.9x width), forewing with MV shorter than PMV and only about 0.4x SMV. It closely resembles *C. indiana* sp. nov., and the characters for separating it from *indiana* are given in the key to Indian species.

2. *Cryptoprymna indiana* sp. nov.

(Figs 7-11)

Female: Length 1.7-1.8 mm (Holotype 1.8 mm). body black; gaster brownish ventrally. Antennae testaceous, clava a little darker at tip. Coxae concolorous with thorax, legs otherwise testaceous with tips of tarsi brown. Tegulae light brown. Wings hyaline, veins pale brown.

Head: (Figs 7 & 10) uniformly and finely reticulate with several black bristles on vertex. In dorsal view, width 2x length; occiput concave; temple length 0.5x eye length; POL 1.4x OOL. In front view, head width 1.2x height; genae depressed considerably; malar space length 0.5x eye length; clypeus produced, anterior margin almost straight. Eyes separated by 1.5x their length. Antennae (Fig. 8) inserted slightly above lower margin of eyes; scape filiform, a little shorter than eye, not reaching front ocellus; pedicel plus flagellum length equal to head width; anelli transverse, equal in length; clava as long as 3.5 preceding segments combined.

Thorax: (Fig. 7) pronotal collar anteriorly margined, finely reticulate on anterior half and shiny on posterior half. Mesoscutum moderately reticulate, width 2.9x length. Scutellum with broad reticulation, frenal area shiny. Propodeum (Fig. 11) with median area moderately and closely reticulate, lateral parts finely reticulate, median and lateral carinae complete, spiracles small, oval, callus with a tuft of setae anteriorly. Prepectus, mesopleuron and metapleuron finely reticulate. Forewing (Fig. 9) with basal vein

setate; costal cell hairy on the upper half; speculum open below. Relative lengths of SMV, MV, PMV and STV as 22:11.5:11:6.5.

Gaster: (Fig. 7) length 1.5x width; petiole length 2.3x width, dorsally reticulate, laterally with very close longitudinal rugae.

Male: Not known

Holotype: Female: INDIA: Kerala: Peechi, 5.ii.1989, Coll. P.M. Sureshan.

Paratypes: 2 Females, Kerala: Silent Valley, 9.xii.1987; 2 Females, Kerala: Palghat (Anakkaty), 12.xii.1987; 1 Female, Kerala, Malampuzha, 11.xii.1987, Coll. P.M. Sureshan.

Biology: Not known.

Remarks: This species closely resembles *C. elongata* sp. nov. but can be distinguished from *elongata* by the characters given in the key. It also resembles *C. atra* in having setate basal vein, bare and shorter petiole, but differs in having a shorter antennal clava (1.6x as long as wide), shorter gaster and longer MV. In *atra* antennal clava more slender ($2.1 \pm 0.21x$ as long as wide), gaster elongate and MV shorter.

Genus *Toxeumorpha* Girault

Toxeumorpha Girault 1915b: 195. Type species: *Toxeumorpha nigra* Girault, by original designation.

Nigricolana Boucek 1976: 16-17. Type species: *Trigonogastra nigricola* Ferriere, by original designation. Boucek 1988: 443. Synonymy.

Girault (1915b) erected the genus *Toxeumorpha* with type species *T. nigra* Girault from Australia. Boucek (1988) synonymised *Nigricolana* Boucek under *Toxeumorpha*. Before synonymising *Nigricolana* under *Toxeumorpha*, Boucek *et al.* (1979) transferred the species *Trigonogastra megacephala* Waterston 1915 to *Nigricolana*. Since *Nigricolana* was later synonymised under *Toxeumorpha*, the species *Nigricolana megacephala* (Waterston) should now be known as *Toxeumorpha megacephala*

(Waterston) comb. nov. Presently there are three described species under this genus: *T. nigra* Girault (1915b) from Australia, *T. nigricolana* (Ferriere, 1936) from Africa and *T. megacephala* (Waterston, 1915) from Ceylon. The genus has restricted distribution and had not been reported from India so far.

Toxeumorpha minuta sp. nov.

(Figs 12-15)

Female: (Figs 12-14) length 1.2 mm. Body black; eyes brownish-black. Antennae brown with scape paler. Legs with hind coxae concolorous with thorax; fore and mid coxae blackish brown, remainder of legs testaceous, except fore femur and tips of tarsi brown. Tegulae brown; wings hyaline, veins pale brown.

Head: (Figs. 12 & 13) uniformly moderate reticulate. In dorsal view, width 1.8x length; temples round, converging, length 0.4x eye length; POL 1.4x OOL; occiput convex. In front view, head width 1.2x height; clypeus with a median angulate tooth; eyes separated by 1.3x their length. Antennae (Fig. 13) inserted along with lower margin of eyes; scape not reaching median ocellus, a little shorter than eye; combined length of pedicel plus flagellum 0.8x head width; pedicel longer than F1; third anellus as long as first and second combined; funicle segments quadrate; pubescence moderate and sparse on flagellum; clava a little shorter than three preceding segments combined.

Thorax: (Fig. 12) length 1.5x width, uniformly and moderately reticulate with black bristles dorsally except on propodeum; pronotal collar not margined, narrower than mesoscutum. Mesoscutum width 2.4x length; notaular grooves complete. Scutellum convex, without frenum. Propodeum width 2.6x length; nucha moderate; median area similarly sculptured as on scutellum, lateral parts finely reticulate; plicae complete; callus with similar black bristles as on other areas

of thorax; spiracles very small. Prepectus broad, triangular, finely reticulate. Mesopleuron and metapleuron moderately reticulate. Forewing (Fig. 14) length 2.3x width; marginal fringe moderately long; discal pubescence small and sparse; basal vein setate; speculum open below. Relative lengths of SMV, MV, PMV, and STV as 15:8:6:3.5.

Gaster: (Fig. 12) length 1.4x width; petiole finely reticulate with a median ridge, embraced by the extension of first sternite; T1 and T2 larger covering most of the gaster; hypopygium reaching beyond middle of the gaster.

Male: (Fig. 15) length 1.1 mm. Resembles female, but differs in having antenna with scape almost reaching median ocellus, flagellum covered with long hairs, F1 anelliform and gaster shorter with a longer petiole.

Holotype: Female: INDIA: Kerala, Calicut University Campus, (-).v.1989, Coll. P.M. Sureshan.

Allotype: Male, same data as that of holotype.

Remarks: This species resembles

T. megacephala (Waterston) in general characters, but differs in having antenna with 3 anelli and 5 funicular segments in female, F1 as long as F2, forewing length 2.3x width with PMV more than half that of MV and distinctly longer than STV. In *megacephala* female antenna with 2 anelli and 6 funicular segments, F1 shorter than F2, forewing length less than 2x width with PMV half as long as MV and only slightly longer than STV. The male of this species also resembles *T. megacephala* male but differs in having antenna with F1 very short, anelliform, pedicel distinctly longer than wide (*megacephala* male possesses an antenna with F1 not anelliform and pedicel hardly longer than wide).

ACKNOWLEDGEMENTS

The first author is grateful to the Director, Zoological Survey of India, Calcutta and the Officer-in-charge, Zoological Survey of India, Calicut for providing facilities and encouragement. We also thank the Head of the Department of Zoology, University of Calicut for facilities.

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